

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

Refine Search

Search Results -

Terms	Documents
(configur\$5 near5 ROM) same (serial adj1 bus)	38

Database:

US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

Search History

DATE: Monday, June 21, 2004 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=USPT,USOC; PLUR=YES; OP=OR

<u>L2</u>	(configur\$5 near5 ROM) same (serial adj1 bus)	38	<u>L2</u>
<u>L1</u>	(configur\$5 near5 ROM) same (serial adj1 bus) same layer	7	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
L2	0

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L3

Refine Search

Recall Text

Clear

Interrupt

Search History

DATE: Monday, June 21, 2004 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

L3 L2

0 L3

DB=USPT,USOC; PLUR=YES; OP=OR

L2 (configur\$5 near5 ROM) same (serial adj1 bus)

38 L2

L1 (configur\$5 near5 ROM) same (serial adj1 bus) same layer

7 L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
(358/1.15 370/463 709/253 709/301 709/302 709/220 710/104 710/105 710/106 710/62 710/63 710/2 710/305 710/8 714/1).ccls.	6337

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L4

Refine Search

Recall Text

Clear

Interrupt

Search History

 DATE: Monday, June 21, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u> <u>Name Query</u> side by side	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
<i>DB=USPT,USOC; PLUR=YES; OP=OR</i>		
L4 710/104,105,106,62,63,2,305,8;709/253,301,302,220;370/463;714/1;358/1.15.ccls.	6337	L4
<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
L3 L2	0	L3
<i>DB=USPT,USOC; PLUR=YES; OP=OR</i>		
L2 (configur\$5 near5 ROM) same (serial adj1 bus)	38	L2
L1 (configur\$5 near5 ROM) same (serial adj1 bus) same layer	7	L1

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
L2 and L4	21

Database:

US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

Search History

 DATE: Monday, June 21, 2004 [Printable Copy](#) [Create Case](#)

<u>Set</u> <u>Name Query</u> side by side	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
<i>DB=USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L5</u> L2 and L4	21	<u>L5</u>
<u>L4</u> 710/104,105,106,62,63,2,305,8;709/253,301,302,220;370/463;714/1;358/1.15.ccls. <i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	6337	<u>L4</u>
<u>L3</u> L2	0	<u>L3</u>
<i>DB=USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L2</u> (configur\$5 near5 ROM) same (serial adj1 bus)	38	<u>L2</u>
<u>L1</u> (configur\$5 near5 ROM) same (serial adj1 bus) same layer	7	<u>L1</u>

END OF SEARCH HISTORY

EAST - [Untitled1:1]

File View Edit Tools Window Help

Drafts
Pending
Active
L1: (1) (configur\$5 near5 ROM)
Failed
Saved
Favorites
Tagged (0)
UDC
Queue
Trash

Search List Browse Queue Clear

DBs: USPAT

Default operator: OR

☒ Plurals
☒ Highlight all hit terms initially

BRS I... IS&R Image Text HTML

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Err
1	BRS	L1	1	(configur\$5 near5 ROM) same (serial adj1 bus)	USPAT	2004/06/21 08:49			0

Start EAST - [Untitled1:1]

EAST - [Untitled1:1]

File View Edit Tools Window Help

Drafts

Pending

Active

L1: (1) (configur\$5 near5 ROM)

Failed

Saved

Favorites

Tagged (0)

UDC

Queue

Trash

Search

DBs

USPAT

Default operator: OR

Plurals

Highlight all hit terms initially

(configur\$5 near5 ROM) same (serial adj1 bus) same (each or individual)

BRS1

IS&R

Image

Text

HTML

	U	1	Document ID	Issue Date	Pages	Title	Current OR	Current XRef R
1	<input type="checkbox"/>	<input type="checkbox"/>	US 6665020 B1	20031216	14	Digital television apparatus for controlling a peripheral	348/552	710/107; 725/80

Start

EAST - [Untitled1:1]



Welcome
United States Patent and Trademark Office



» See

[Help](#) [FAQ](#) [Terms](#) [IEEE Peer Review](#)

Quick Links

Welcome to IEEE Xplore®

- ☐ Home
- ☐ What Can I Access?
- ☐ Log-out

Tables of Contents

- ☐ Journals & Magazines
- ☐ Conference Proceedings
- ☐ Standards

Search

- ☐ By Author
☐ Basic
☐ Advanced

Member Services

- ☐ Join IEEE
- ☐ Establish IEEE Web Account
- ☐ Access the IEEE Member Digital Library

 Print Format

Your search matched **4** of **1045422** documents.

A maximum of **500** results are displayed, **15** to a page, sorted by **Relevance Descending** order.

Refine This Search:

You may refine your search by editing the current search expression or entering a new one in the text box.

```
configur* and rom and (link or node)
```

Search

☐ Check to search within this result set

Results Key:

JNL = Journal or Magazine **CNF** = Conference **STD** = Standard

1 Three-phase four wire voltage controlled AC line conditioner with u input power factor and minimised output voltage harmonics

Lo, Y.-K.; Chen, C.-L.;

Electric Power Applications, IEE Proceedings- , Volume: 142 , Issue: 1 , Jan. :
Pages:43 - 49

[\[Abstract\]](#) [\[PDF Full-Text \(428 KB\)\]](#) **IEE JNL**

2 Development of a portable multi-functional patient monitor

Wong, C.; Chan, K.L.;

Engineering in Medicine and Biology Society, 2000. Proceedings of the 22nd /
International Conference of the IEEE , Volume: 4 , 23-28 July 2000
Pages:2611 - 2614 vol.4

[Abstract] [PDF Full-Text (544 KB)] IEEE CNF

3 Requirements, configuration management and traceability for safety critical software

Romanski, G.;

Requirements Engineering Conference, 2003. Proceedings. 11th IEEE International , 8-12 Sept. 2003
Pages:304

[Abstract] [PDF Full-Text (175 KB)] IEEE CNF

4 A parallel ultra-high resolution MPEG-2 video decoder for PC cluster based tiled display systems

Han Chen; Kai Li; Bin Wei;

Parallel and Distributed Processing Symposium., Proceedings International, IF
2002, Abstracts and CD-ROM , 15-19 April 2002

IEEE HOME | SEARCH IEEE | SHOP | WEB ACCOUNT | CONTACT IEEE



Membership Publications/Services Standards Conferences Careers/Jobs

IEEE Xplore®
 RELEASE 1.7

 Welcome
 United States Patent and Trademark Office

[Help](#) [FAQ](#) [Terms](#) [IEEE Peer Review](#)
[Quick Links](#)
Welcome to IEEE Xplore®

- ☐ Home
- ☐ What Can I Access?
- ☐ Log-out

Tables of Contents

- ☐ Journals & Magazines
- ☐ Conference Proceedings
- ☐ Standards

Search

- ☐ By Author
- ☐ Basic
- ☐ Advanced

Member Services

- ☐ Join IEEE
- ☐ Establish IEEE Web Account
- ☐ Access the IEEE Member Digital Library

Print Format

[Search Results](#) [\[PDF FULL-TEXT 175 KB\]](#) [PREV](#) [NEXT](#) [DOWNLOAD CITATION](#)

 Request Permissions
RIGHTS LINK

Requirements, configuration management and traceability for safety critical software

Romanski, G.

Verocel, Inc.

This paper appears in: Requirements Engineering Conference, 2003. Proceedings of the 11th IEEE International

Publication Date: 8-12 Sept. 2003

On page(s): 304

ISSN: 1090-705X

Number of Pages: xv+378

Inspec Accession Number: 7914023

Abstract:

Software requirements are the focal point from which traceability to all related artifacts are established during the certification of safety critical software. For the certification of air-borne software, the guidance document DO-178B, requires that the link between requirements, design, code and tests be documented and verified. The DO-178B document does not describe how this should be done, but it permits the reengineering of information that is missing, to support the certification of commercial-off-the-shelf (COTS) products. Requirements were entered in a database and evolved through a sequence that enforced the states described in company process documents. Requirements descriptions, source code, tests, results and so on were maintained in a configuration management (CM) system. The final audit was successful and the CD-ROM documentation requirements based certification package was accepted and commended. The approach and the lessons learned were presented.

Index Terms:

[formal specification](#) [formal verification](#) [military computing](#) [safety-critical software](#) [software systems analysis](#) [CM system](#) [COTS product](#) [air-borne software](#) [certification package](#) [commercial-off-the-shelf](#) [company process document](#) [configuration management](#) [in reengineering](#) [safety critical software](#) [software requirement](#)

Documents that cite this document

There are no citing documents available in IEEE Xplore at this time.

IEEE HOME | SEARCH IEEE | SHOP | WEB ACCOUNT | CONTACT IEEE



Membership Publications/Services Standards Conferences Careers/Jobs

IEEE Xplore®
 RELEASE 1.7

 Welcome
 United States Patent and Trademark Office


>> See

[Help](#) | [FAQ](#) | [Terms](#) | [IEEE Peer Review](#)

Quick Links

Welcome to IEEE Xplore®

- ☐ Home
- ☐ What Can I Access?
- ☐ Log-out

Tables of Contents

- ☐ Journals & Magazines
- ☐ Conference Proceedings
- ☐ Standards

Search

- ☐ By Author
- ☐ Basic
- ☐ Advanced

Member Services

- ☐ Join IEEE
- ☐ Establish IEEE Web Account
- ☐ Access the IEEE Member Digital Library

Your search matched **0** of **1045422** documents.A maximum of **500** results are displayed, **15** to a page, sorted by **Relevance Descending** order.

Refine This Search:

You may refine your search by editing the current search expression or entering new one in the text box.

☐ Check to search within this result set

Results Key:

JNL = Journal or Magazine **CNF** = Conference **STD** = Standard

Results:

No documents matched your query.

Print Format

[Home](#) | [Log-out](#) | [Journals](#) | [Conference Proceedings](#) | [Standards](#) | [Search by Author](#) | [Basic Search](#) | [Advanced Search](#) | [Join IEEE](#) | [Web Account](#) | [New this week](#) | [OPAC Linking Information](#) | [Your Feedback](#) | [Technical Support](#) | [Email Alerting](#) | [No Robots Please](#) | [Release Notes](#) | [IEEE Online Publications](#) | [Help](#) | [FAQ](#) | [Terms](#) | [Back to Top](#)

Copyright © 2004 IEEE — All rights reserved

Hit List

Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 6745256 B2

Using default format because multiple data bases are involved.

L1: Entry 1 of 7

File: USPT

Jun 1, 2004

US-PAT-NO: 6745256

DOCUMENT-IDENTIFIER: US 6745256 B2

TITLE: Information processing apparatus and method

DATE-ISSUED: June 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Suzuki; Naohisa	Yokohama			JP
Nakamura; Atsushi	Kawasaki			JP
Kobayashi; Makoto	Yokohama			JP
Katano; Kiyoshi	Chiba			JP

US-CL-CURRENT: 710/18; 710/19, 710/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Examiner	Assistant	Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	----------	-----------	--------	------	----------

☐ 2. Document ID: US 6665020 B1

L1: Entry 2 of 7

File: USPT

Dec 16, 2003

US-PAT-NO: 6665020

DOCUMENT-IDENTIFIER: US 6665020 B1

TITLE: Digital television apparatus for controlling a peripheral device via a digital bus

Full	Title	Citation	Front	Review	Classification	Date	Reference	Examiner	Assistant	Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	----------	-----------	--------	------	----------

☐ 3. Document ID: US 6477589 B1

L1: Entry 3 of 7

File: USPT

Nov 5, 2002

US-PAT-NO: 6477589

h e b b g e e f e c f e f b e

DOCUMENT-IDENTIFIER: US 6477589 B1

**** See image for Certificate of Correction ****

TITLE: Information processing apparatus and method

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	----------

☐ 4. Document ID: US 6367026 B1

L1: Entry 4 of 7

File: USPT

Apr 2, 2002

US-PAT-NO: 6367026

DOCUMENT-IDENTIFIER: US 6367026 B1

TITLE: Unbalanced clock tree for a digital interface between an IEEE 1394 serial bus system and a personal computer interface (PCI)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	----------

☐ 5. Document ID: US 6185622 B1

L1: Entry 5 of 7

File: USPT

Feb 6, 2001

US-PAT-NO: 6185622

DOCUMENT-IDENTIFIER: US 6185622 B1

TITLE: Electronic apparatus, communication speed information collection method, communication method between electronic apparatus and recording medium

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	----------

☐ 6. Document ID: US 6160796 A

L1: Entry 6 of 7

File: USPT

Dec 12, 2000

US-PAT-NO: 6160796

DOCUMENT-IDENTIFIER: US 6160796 A

TITLE: Method and system for updating device identification and status information after a local bus reset within a home audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Drawings
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	----------

☐ 7. Document ID: US 6038625 A

L1: Entry 7 of 7

File: USPT

Mar 14, 2000

US-PAT-NO: 6038625

DOCUMENT-IDENTIFIER: US 6038625 A

TITLE: Method and system for providing a device identification mechanism within a consumer audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Summary	Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	----------	---------	--------	------	----------

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
-------	---------------------	-------	----------	-----------	---------------

Terms	Documents
(configur\$5 near5 ROM) same (serial adj1 bus) same layer	7

Display Format:

[Previous Page](#) [Next Page](#) [Go to Doc#](#)

Hit List

Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 6745256 B2

Using default format because multiple data bases are involved.

L1: Entry 1 of 7

File: USPT

Jun 1, 2004

US-PAT-NO: 6745256

DOCUMENT-IDENTIFIER: US 6745256 B2

TITLE: Information processing apparatus and method

DATE-ISSUED: June 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Suzuki; Naohisa	Yokohama			JP
Nakamura; Atsushi	Kawasaki			JP
Kobayashi; Makoto	Yokohama			JP
Katano; Kiyoshi	Chiba			JP

US-CL-CURRENT: 710/18; 710/19, 710/8

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--------	------	----------

☐ 2. Document ID: US 6665020 B1

L1: Entry 2 of 7

File: USPT

Dec 16, 2003

US-PAT-NO: 6665020

DOCUMENT-IDENTIFIER: US 6665020 B1

TITLE: Digital television apparatus for controlling a peripheral device via a digital bus

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--------	------	----------

☐ 3. Document ID: US 6477589 B1

L1: Entry 3 of 7

File: USPT

Nov 5, 2002

US-PAT-NO: 6477589

h e b b g e e f e c f e f b e

DOCUMENT-IDENTIFIER: US 6477589 B1

**** See image for Certificate of Correction ****

TITLE: Information processing apparatus and method

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	---------

☐ 4. Document ID: US 6367026 B1

L1: Entry 4 of 7

File: USPT

Apr 2, 2002

US-PAT-NO: 6367026

DOCUMENT-IDENTIFIER: US 6367026 B1

TITLE: Unbalanced clock tree for a digital interface between an IEEE 1394 serial bus system and a personal computer interface (PCI)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	---------

☐ 5. Document ID: US 6185622 B1

L1: Entry 5 of 7

File: USPT

Feb 6, 2001

US-PAT-NO: 6185622

DOCUMENT-IDENTIFIER: US 6185622 B1

TITLE: Electronic apparatus, communication speed information collection method, communication method between electronic apparatus and recording medium

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	---------

☐ 6. Document ID: US 6160796 A

L1: Entry 6 of 7

File: USPT

Dec 12, 2000

US-PAT-NO: 6160796

DOCUMENT-IDENTIFIER: US 6160796 A

TITLE: Method and system for updating device identification and status information after a local bus reset within a home audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	---------

☐ 7. Document ID: US 6038625 A

L1: Entry 7 of 7

File: USPT

Mar 14, 2000

US-PAT-NO: 6038625

DOCUMENT-IDENTIFIER: US 6038625 A

TITLE: Method and system for providing a device identification mechanism within a consumer audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KMMC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	----------

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
-------	---------------------	-------	----------	-----------	---------------

Terms	Documents
(configur\$5 near5 ROM) same (serial adj1 bus) same layer	7

Display Format:

[Previous Page](#) [Next Page](#) [Go to Doc#](#)

First Hit Fwd Refs☐ **Generate Collection** **Print**

L6: Entry 2 of 10

File: USPT

Dec 30, 2003

US-PAT-NO: 6671768

DOCUMENT-IDENTIFIER: US 6671768 B1

TITLE: System and method for providing dynamic configuration ROM using double image buffers for use with serial bus devices

DATE-ISSUED: December 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brown; Steven W.	San Jose	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Apple Computer, Inc.	Cupertino	CA			02

APPL-NO: 09/ 431409 [PALM]

DATE FILED: November 1, 1999

INT-CL: [07] G06 F 12/00, G06 F 13/00

US-CL-ISSUED: 711/102; 711/5, 711/170, 713/1, 713/100

US-CL-CURRENT: 711/102; 711/170, 711/5, 713/1, 713/100

FIELD-OF-SEARCH: 711/170, 711/102, 711/103, 711/5, 711/162, 710/101, 710/103, 710/104, 717/11, 714/6, 714/7, 713/1, 713/2, 713/100

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected**Search ALL****Clear**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>5568641</u>	October 1996	Nelson	713/2
<input type="checkbox"/>	<u>5701492</u>	December 1997	Wadsworth et al.	717/11
<input type="checkbox"/>	<u>5809331</u>	September 1998	Staats et al.	710/10
<input type="checkbox"/>	<u>5835761</u>	November 1998	Ishii et al.	713/2
<input type="checkbox"/>	<u>5938764</u>	August 1999	Klein	713/1
<input type="checkbox"/>	<u>5987605</u>	November 1999	Hill et al.	713/2
<input type="checkbox"/>	<u>6073206</u>	June 2000	Piwonka	711/103

<input type="checkbox"/>	<u>6141767</u>	October 2000	Hu et al.	714/1
<input type="checkbox"/>	<u>6167532</u>	December 2000	Wisecup	714/23

ART-UNIT: 2187

PRIMARY-EXAMINER: Gossage; Glenn

ATTY-AGENT-FIRM: Sierra Patent Group, Ltd.

ABSTRACT:

A system and method for providing dynamic configuration Read Only Memory (ROM) using double image buffers for use with serial bus devices. The dynamic configuration ROM may be updated while linked to the serial bus and with little or no risk of publishing inconsistent configuration ROM information to other nodes on the bus. The dynamic configuration ROM comprises first and second configuration ROM images, one set to active, the other set to update. The dynamic configuration ROM publishes the configuration entries from the active configuration ROM image. Modifications to the configuration ROM are stored in a database. The update configuration ROM image is constructed from entries made to the database. After the construction of the update configuration ROM image is completed, the dynamic configuration ROM switches the states of the ROM images and transmits a serial bus reset signal. Subsequently, the configuration entries from the newly active configuration ROM images are then published to the other nodes on the bus.

10 Claims, 6 Drawing figures



US006665020B1

(12) United States Patent
Stahl et al.**(10) Patent No.: US 6,665,020 B1**
(45) Date of Patent: Dec. 16, 2003**(54) DIGITAL TELEVISION APPARATUS FOR CONTROLLING A PERIPHERAL DEVICE VIA A DIGITAL BUS****(75) Inventors:** Thomas Anthony Stahl, Indianapolis, IN (US); Steven Charles Rhoads, Carmel, IN (US); Mike Arthur Berrenberger, Fishers, IN (US); Izzat Hakmat Izzat, Carmel, IN (US); Saban Kurugay, Waukegan, WI (US); Amit Kumar Chatterjee, North Andover, MA (US); Sanjeev Nagpal, Longmont, CO (US)**(73) Assignee:** Thomson Licensing S.A., Boulogne (FR)**(*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.**(21) Appl. No.:** 09/508,922**(22) PCT Filed:** Sep. 18, 1998**(86) PCT No.:** PCT/US98/19631

§ 371 (c)(1),

(2), (4) Date: Sep. 13, 2000

(87) PCT Pub. No.: WO99/14946

PCT Pub. Date: Mar. 25, 1999

Related U.S. Application Data**(60)** Provisional application No. 60/071,341, filed on Jan. 14, 1998, provisional application No. 60/066,782, filed on Nov. 25, 1997, and provisional application No. 60/058,507, filed on Sep. 11, 1997.**(51) Int. Cl.:** H04N 7/00**(52) U.S. Cl.:** 348/552; 725/80; 710/107**(58) Field of Search:** 710/104, 105, 710/107, 110, 305, 117, 8, 15; 345/723; 348/460, 552, 734, 569; 725/38, 60**(55) References Cited****U.S. PATENT DOCUMENTS**

5,488,357 A	1/1996	Sato et al.	
5,499,018 A	3/1996	Welmer	
5,608,730 A	3/1997	Onakabe et al.	
5,617,330 A	4/1997	Stirling	
5,787,259 A *	7/1998	Haroun et al.	348/552
5,794,118 A *	8/1998	Yoshinobu	455/5.1
5,844,623 A *	12/1998	Iwamura	348/553
5,936,667 A *	8/1999	Saib	348/160
6,003,065 A *	12/1999	Yan et al.	709/201
6,313,680 B1 *	11/2001	Smyers et al.	348/552
6,370,322 B2 *	4/2002	Horiguchi et al.	385/95
6,381,697 B1 *	4/2002	Kawamura	213/162
6,421,069 B1 *	7/2002	Ludike et al.	345/762
6,442,630 B1 *	8/2002	Takayama et al.	710/105
2001/0012447 A1 *	8/2001	Horiguchi	386/125

FOREIGN PATENT DOCUMENTS

EP	0849884	6/1998	H04B3/20
EP	0873009	10/1998	H04N5/00

OTHER PUBLICATIONS

International Search Report dated Dec. 18, 1998.

* cited by examiner

Primary Examiner—Victor R. Kostak**(74) Attorney, Agent, or Firm**—Joseph S. Tripoli; Paul P. Kiel**(57) ABSTRACT**

A minimal level of interoperability for exchanging audio/video (A/V) content and associated control between common consumer electronic (CE) devices is defined. This interoperability is based on the IEEE 1394 serial bus for the physical and link layers and makes use of AV/C or CAL as the control language. This invention provides for reducing the number of remote controls that the user might need by allowing remote control commands to always be received by a controlling device (e.g., digital television) and then routed to the appropriate peripheral device (e.g. digital VCR) after translation into a universal format.

12 Claims, 5 Drawing Sheets

